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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)	
550-499	

Application Number	Filed
10/743,473	December 23, 2003
First Named Inventor	
HOULIHANE	
Art Unit	**Examiner**
2863	Walling, Meagan S.

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ Applicant/Inventor

☐ Assignee of record of the entire interest. See 37 C.F.R. § 3.71. Statement under 37 C.F.R. § 3.73(b) is enclosed. (Form PTO/SB/96)

☒ Attorney or agent of record 33,149 (Reg. No.)

☐ Attorney or agent acting under 37CFR 1.34.
Registration number if acting under 37 C.F.R. § 1,34 _____

Signature

John R. Lastova
Typed or printed name

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Requester's telephone number

February 1, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.*

☒ *Total of 1 form/s are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

HOULIHANE

Atty. Ref.: 550-499; Confirmation No. 8029

Appl. No. 10/743,473

TC/A.U. 2863

Filed: December 23, 2003

Examiner: Walling, Meagan S.

For: GENERATION OF A TESTBENCH FOR A REPRESENTATION OF A DEVICE

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February 1, 2006

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Alexandria, VA 22313-1450

STATEMENT OF ARGUMENTS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Claims 1-4, 7, 18, 22-28, 31, 42, and 46 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication U.S. 2004/0111252 to Burgun et al. This rejection is in error because Burgun lacks one or more claim features recited in the independent claims.[1]

The first clear error in this rejection stems from the fact that Burgun and the independent claims are directed to different phases in device design testing. Burgun states in paragraph 0002 that his invention applies to "the implementation of a test environment for a circuit whose operation one seeks to validate (and referred to as the "design under test") and which is emulated entirely or partly by a reconfigurable hardware system." Burgun explains that the word "emulator" means "a reconfigurable hardware system." Para. 0003.

Burgun's concern is that the test environment embedded in the reconfigurable hardware system and the design under test are both typically implemented by the same configurable

[1] The pre-appeal panel is encouraged to consider the background provided on pages 2-3 of the request for reconsideration and that provided on pages 1-3.

resources, and that this consequently results in a "very strong dependence between the test environment and the design under test." Para. 17. Burgun's solution is to provide a simulation/emulation platform in which the reconfigurable system emulating the design under test is separated from that emulating the hardware part of the test environment. See paras. 0023-25.

But here is a fundamental difference between Burgun and the independent claims: Burgun starts off with an ***already-generated*** design under test and an associated test environment. For example, Burgun states in paragraph 0026: "the invention therefore proposes a method of emulating a design under test associated with a test environment." It is in this context that paragraphs 0027-29 must be understood. Assuming an already-generated design under test and an already-generated test environment, Burgun configures reconfigurable hardware circuits to simulate/emulate the operation of that design under test and associated test environment. Thus, Burgun is directed to the simulation process described on page 6, lines 12-16 of the instant application.

In contrast, claims 1, 23-25, and 46 are directed to the ***earlier*** phaseof generating a representation of the device under test and a representation of its associated test environment, so that those representations can subsequently be simulated using a simulation tool. Please consider the non-limiting example sequence of steps shown Figure 8 of the instant application where steps 605-615 are performed by a processing tool 150 to generate files for a representation of a device under test (DUT) and files for a representation of a test bench files using the same configuration data for the DUT representation. Only after these two sets of representation files have been generated is a simulator tool run and simulation performed using those generated file sets. Each of the *independent* claims is directed to generating these files. Simulation using those files is explicitly recited in *dependent* claims. See for example dependent claim 8. So it is unreasonable

to argue that the independent claims can be construed as simulation since a dependent claim adds simulation.

The Examiner relies on paragraphs 0028 and 0032 of Burgun. Paragraphs 0026-30 describe emulating an already-generated design under test with an already-generated test environment (see paragraph 0026). This process involves generating two different configuration files. The first configuration file is used to configure a first reconfigurable hardware part that represents a test bench (paragraph 0028), and the second configuration file is used to configure a second reconfigurable hardware part for emulating the design under test (paragraph 0029). As stressed in paragraph 0029, the first and second reconfigurable hardware parts are "distinct and mutually connected." These two separate parts are provided with their own separate configuration files to overcome the problems associated with the "strong dependence" between the test environment and the design under test." See paragraph 0017.

Accordingly, Burgun's configuration files are not used to "configure the representation of the device" (quoted from claim 1) and to generate the associated "testbench with reference to the configuration data and a first set of templates defining the test environment" (quoted from claim 1). Instead, Burgun's configuration files are used to configure the reconfigurable hardware units (i.e., emulators as defined by Burgun in paragraph 0003) used to emulate an ***already-existing*** design under test and an associated test environment.

The Examiner contends that "the invention as described in the specification" is argued as different from Burgun, which the Examiner admits it is, but that the claim language is so broad that it is not different from Burgun. This argument fails for the very reasons just explained in the previous paragraph where quoted claim language is demonstrated as not being disclosed in Burgun. Like claim 1, claim 23 is also a method of "generating a representation of a device... and a testbench where configuration data for the device representation is received and used along

with first templates defining the test environment to generate the testbench. Claim 23 goes further than claim 1 and recites using "the processing tool to generate the representation of the device with reference to the configuration data and a second set of templates defining the representation of the device." This feature is not disclosed in Burgun. The claim features missing from Burgun with respect to claim 1 are also recited in claim 25. The claim features missing from Burgun with respect to claim 23 are also recited in claim 46.

A second clear error with the anticipation rejection is that Burgun does not teach using the same configuration data to configure the representation of the device and to generate the testbench. Indeed, Burgun *stresses using two **different** configuration files*: the first configuration file configures the reconfigurable hardware representing the testbench and the second configuration file configures the reconfigurable hardware unit acting as an emulator for the device under test. In contrast, claim 1 recites at step (b) the testbench is generated with reference to **the** configuration data and a first set of templates. From the earlier recitations in claim 1, **the** configuration data being referred to is the same configuration data used to configure the representation of the device in step (a). A significant insight by the inventor was that the same configuration data can be used for the representation of the device under test and the representation of the testbench. As a result, it is possible to generate testbench representation files for the DUT that match the top-level of the representation of the DUT, thereby allowing any possible configuration of the DUT to be tested when that particular configuration of the DUT has been generated.

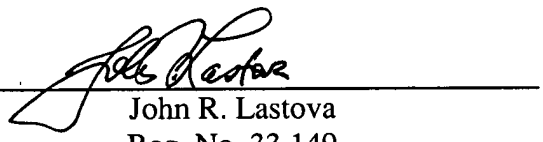
The Examiner also refers to paragraph 0032 in relation to step (b) of claim 1. It is unclear if the Examiner is taking the view that those compilation directives are analogous to the claimed first set of templates. In any event, such a position is inconsistent with Burgun's teachings in paragraph 0032 that the result of the generating step which makes use of the

compilation directives is the first configuration file (see the last line of paragraph 0032). Hence, the compilation directives are used in the generation of the configuration file. But in claim 1, the first set of templates and the configuration data are used as inputs in the generation of a testbench. Paragraph 0032 in Burgun makes clear that the configuration file is the output of the processing and not an input. Accordingly, the compilation directives being referred to in paragraph 0032 are entirely different than the first set of templates recited in claim 1.

Given the clear errors in the rejection and the fact that multiple features recited in the independent claims 1, 23-25, and 46 are missing from Burgun, the anticipation rejection based on Burgun should be withdrawn and the application passed to allowance.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
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